

Amendment dated January 22, 2008
Serial No. 10/880,867

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IN THE CLAIMS

Claim 1. (Currently Amended) A computer-readable medium containing instructions for controlling at least one processor to perform a method of scheduling resources of ~~on~~ a switched underlay network, the method comprising the steps of:

receiving a request for scheduled resources of the switched underlay network;

scheduling the request to occur on particular scheduled resources of the switched underlay network; and

coordinating with a data source to transmit data over the scheduled resources at the scheduled time.

Claim 2. (Currently Amended) The computer-readable medium method of claim 1, wherein the request has constraints, and wherein coordinating with the data source comprises ascertaining whether the data source is able to transmit data in conformance with the constraints.

Claim 3. (Currently Amended) The computer-readable medium method of claim 2, wherein the step of coordinating takes place before the step of scheduling.

Claim 4. (Currently Amended) The computer-readable medium method of claim 1, wherein the resources are lambdas.

Claim 5. (Currently Amended) The computer-readable medium method of claim 1, wherein the request is an underconstrained request.

Claim 6. (Currently Amended) The computer-readable medium method of claim 1, wherein the request is a new underconstrained request, the method further comprising the step of optimizing the utilization of scheduled resources by moving scheduled resources allocated to at least one old request to accommodate the new underconstrained request.

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Claim 7. (Currently Amended) The computer-readable medium method of claim 6, wherein some of the old requests are underconstrained requests and at least one of the old requests is a constrained request.

Claim 8. (Currently Amended) The computer-readable medium method of claim 1, wherein the request is a new underconstrained request, the method further comprising the step of optimizing the utilization of scheduled resources by canceling scheduled resources allocated to at least one old request to accommodate the new underconstrained request.

Claim 9. (Currently Amended) The computer-readable medium method of claim 8, the method further comprising the step of inviting resubmission of the canceled old request.

Claim 10. (Currently Amended) The computer-readable medium method of claim 1, the method further comprising the step of relinquishing scheduled resources where the scheduled resources subsequently are no longer required.

Claim 11. (Currently Amended) The computer-readable medium method of claim 1, wherein the request specifies the transfer priority, bandwidth requirements, transfer duration, desired transfer time window, and the time of submission.

Claim 12. (Currently Amended) The computer-readable medium method of claim 1, wherein the step of scheduling the request is only performed if the method is able to schedule resources within constraints specified in the request.

Claim 13. (Currently Amended) The computer-readable medium method of claim 1, wherein the step of scheduling the request will partially schedule the request if the method is only able to partially schedule resources within the constraints specified in the request.

Claim 14. (Currently Amended) The computer-readable medium method of claim 1, wherein the step of scheduling the request enables data transfers to occur on demand, rigidly in the future, loosely in the future, and in a manner constrained by external events.

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Claim 15. (Currently Amended) The computer-readable medium ~~method~~ of claim 1, the method further comprising the step of notifying a requesting party of the scheduled resources.

Claim 16. (Currently Amended) The computer-readable medium ~~method~~ of claim 1, the method further comprising the step of interfacing with network resources to reserve bandwidth on the switched underlay network.

Claim 17. (Currently Amended) The computer-readable medium ~~method~~ of claim 16, wherein the step of interfacing comprises querying the network for its topology and the relevant characteristics of links to be used to fulfill the request.

Claim 18. (Currently Amended) The computer-readable medium ~~method~~ of claim 16, wherein the step of interfacing comprises planning a path through the switched underlay network from a data source to a data target, and reserving bandwidth along the path.

Claim 19. (Currently Amended) The computer-readable medium ~~method~~ of claim 16, wherein the request is a request for scheduled resources to enable a large data transfer to take place on the switched underlay network.

Claim 20. (Currently Amended) The computer-readable medium ~~method~~ of claim 19, the method further comprising the step of coordinating large data transfer between a data source and a data target.

Claim 21. (Currently Amended) The computer-readable medium ~~method~~ of claim 20, wherein the step of coordinating the large data transfer comprises ascertaining the availability of the data source to transmit the data and the availability of the data target to receive the data.

Claim 22. (Currently Amended) A computer-implemented data transfer scheduling service configured to schedule network resources on a switched underlay network, comprising:

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a data management service, ~~said data management service being configured~~ to perform network topology discovery, route creation, and path allocation for network resources requests; and

a network resource manager, ~~said network resource manager being configured~~ to interface network devices in the switched underlay network to ~~schedule~~ reserve network resources on the switched underlay network for the network resources requests;

wherein at least one of the data management service and the network resource manager ~~is configured to schedules~~ underconstrained network resources requests for the network resources ~~on~~ of the switched underlay network.

Claim 23. (Currently Amended) The computer-implemented data transfer scheduling service of claim 22, wherein at least one of the data management service and the network resource manager is configured to obtain information associated with the availability of a data source and optimize a schedule of scheduled underconstrained requests.